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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 10/567,634
Applicant(s) : Guldenfels et al.
Filed : February 8, 2006
Title : Device For Retaining A Headed Pivot Rod
TC/A.U. : 3651
Examiner : Mark A. Deuble
Docket No. : 031529.00106

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief follows a "Notice of Appeal" filed September 26, 2008.
Applicants respectfully request allowance of the claims.

The Director is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account Number 08-2442.

I. REAL PARTY IN INTEREST

The real party in interest is Habasit AG, assignee of the present application. An assignment document from the inventor to Habasit AG is recorded in the USPTO at Reel 021130 / Frame 0344.

II. RELATED APPEALS AND INTERFERENCES

There are no other related appeals or interferences known to the Applicant.

III. STATUS OF CLAIMS

The application as filed included claims 1-17; claims 1-17 are rejected and are being appealed.

IV. STATUS OF AMENDMENTS

A Final Office Action was mailed April 4, 2008. No amendments have been submitted after mailing of the Final Office Action. There are no amendments that have not been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claims 1, 9, and 17 are the independent claims on appeal. Claim 1 is directed to a belt module (13) for use with a headed pivot rod (103). See specification at page 3, lines 17-18 and page 5, lines 7-8. The belt module (13) has a first plurality of link ends (35). See specification at page 6, lines 8-10. The first plurality of link ends (35) are disposed in a direction of belt travel (20). See id. at page 5, lines 9-10. The first link ends (35) have first pivot rod openings (48) disposed transverse to the direction of belt travel (20). See id. at page 6, lines 21-23. A second plurality of link ends (38) extending in a direction opposite to the first plurality of link ends (35). See id. at page 6, lines 10-12. The second link ends (38) are offset from the first link ends (35) such that adjacently positioned belt modules (13, 16) are capable of intercalating so that the first link ends (41) of one belt module (16) fit into spaces defined between the second plurality of link ends (38) of an adjacent belt module (13). See id. at page 6, lines 5-7 and Fig. 1.

The second link ends (38) have second pivot rod openings (47) disposed transverse to the direction of belt travel (20). See specification at page 6, lines 15-18. The second link ends (38) also have an edge portion with an edge portion pivot rod opening (51) disposed transverse to the direction of belt travel (20), the edge portion pivot rod opening (51) having a diameter larger than a diameter of the first and second pivot rod openings (48, 47). In this manner, the pivot rod (103) can only be removed in one direction. See id. at page 6, line 23-page 7, line 13. The edge portion pivot rod opening (51) is in registry with the second pivot rod openings (47), and the edge portion has a slot (73) defined therein. See id. at page 7, line 17. The slot (73) intersects the pivot rod opening (51), and a blocking member (70) is disposed in the slot (73). See id. at page 7, lines 16-18. The blocking member (70) is capable of moving between a first (open) position and a second (closed) position. See specification at page 7, lines 18-20. The blocking member (70) extends into the edge portion pivot rod opening (51) and obstructs the head (106) of the pivot rod (103) in the second (closed) position such that the pivot rod (103) is prevented from exiting the edge portion pivot rod opening (51). See id. at page 8, lines 13-15.

Claim 9 is directed to a modular belt (10). See specification at page 5, lines 7-8 and page 6, lines 5-7. The belt (10) comprises a first belt module (13) which, in turn, comprises a first plurality of link ends (35). See id. at page 6, lines 8-10. The link ends are disposed in the direction of belt travel (20). See id. at page 5, lines 9-10. The first link ends (35) have first pivot rod openings (48) disposed transverse to the direction of belt travel (20). See id. at page 6, lines 21-23. A second plurality of link ends (38) extends in a direction opposite to the first plurality of link ends (35). See id. at page 6, lines 10-12. The second link ends (38) are offset from the first link ends (35) such that adjacently positioned belt modules (13,16) are capable of intercalating so that the first link ends (41) of one belt module (16) fit into spaces defined between the second plurality of link ends (38) of an adjacent belt module (13). See specification at page 6, lines 5-7 and Fig. 1. The second link ends (38) have second pivot rod openings (47) disposed transverse to the direction of belt travel (20) and an edge portion having an edge portion pivot rod opening (51) disposed transverse to the direction of belt travel (20). See id. at page 6, lines 15-18. The edge portion pivot rod opening (51) has a diameter larger than a diameter of the first and second pivot rod openings of the first and second link ends (48, 47). See id. at page 6, lines 23-27. The

edge portion pivot rod opening (51) is in registry with the second pivot rod openings (47), and the edge portion has a slot (73) defined therein. See id. at page 7, lines 17. The slot (73) intersects the edge portion pivot rod opening (51), and a blocking member (70) is disposed in the slot (73). See specification at page 7, lines 16-18. The blocking member (70) is capable of moving between a first (open) position and a second (closed) position. See id. at page 7, lines 18-20. The blocking member (70) extends into the edge portion pivot rod opening (51) in the second (closed) position. See id. at page 8, lines 13-15.

A second belt module (16) is disposed adjacent to the first belt module (13). See specification at page 5, lines 7-8. The second belt module (16) comprises a first plurality of link ends (41). See id. at page 6, lines 8-10. The first plurality of link ends (41) are disposed in a direction of belt travel (20). See id. at page 5, lines 9-10. The first link ends (41) having first pivot rod openings (48) disposed transverse to the direction of belt travel (20). See specification at page 6, lines 21-23. A second plurality of link ends (44) extends in a direction opposite to the first plurality of link ends (41). See id. at page 6, lines 10-12. The second link ends (44) are offset from the first link ends (41) such that adjacently positioned belt modules (13, 16) are capable of intercalating so that the first link ends (41) of one belt module (16) fit into spaces defined between the second plurality of link ends (38) of an adjacent belt module (13). See id. at page 6, lines 5-7. The second link ends (44) have second pivot rod openings (47) disposed transverse to the direction of belt travel (20) and an edge portion has an edge portion pivot rod opening (51) disposed transverse to the direction of belt travel (20). See id. at page 6, lines 15-18. The edge portion pivot rod opening (51) has a diameter larger than a diameter of the first pivot rod openings (48) of the first and second link ends (41, 44). See id. at page 6, lines 23-27. The edge portion pivot rod opening (51) is in registry with the second pivot rod openings (47), and the edge portion having a slot (73) defined therein. See id. at page 7, line 17. The slot (73) intersects the edge portion pivot rod opening (51), and a blocking member (70) is disposed in the slot (73). See id. at page 7, lines 16-18. The blocking member (70) is capable of moving between a first (open) position and a second (closed) position. See id. at page 7, lines 18-20. The blocking member (70) extends into the edge portion pivot rod opening (51) in the second (closed) position. See id. at page 8, lines 13-15.

At least one pivot rod (103) is disposed through the edge portion pivot rod opening (51) of the first belt module (13) and through the intercalated first and second pivot rod openings (47, 48) of the first belt module (13) and the second belt module (16). See specification at page 6, lines 17-18 and page 7, lines 5-8. The pivot rod (103) has an enlarged head (106) at a first end. See id. at page 6, lines 24-25. The enlarged head (106) of the pivot rod (103) is obstructed by the blocking member (70) when the blocking member (70) is in its second (closed) position such that the pivot rod (103) is prevented from exiting the edge portion pivot rod opening (51). See id. at page 7, lines 5-13. In this manner, the pivot rod (103) can only be removed in one direction. See id. at page 7, lines 14-16.

Claim 17 is directed to a method of configuring a modular belt (10). The method comprises providing a plurality of belt modules (13, 16) having a first plurality of link ends (35). See specification at page 6, lines 8-10. The first link ends (35) are disposed in a direction of belt travel (20). See id. at page 5, lines 9-10. The first link ends (35) having first pivot rod openings (48) disposed transverse to the direction of belt travel (20). See id. at page 6, lines 21-23. A second plurality of link ends (38) extends in a direction opposite to the first plurality of link ends (35). See id. at page 6, lines 10-12. The second link ends (38) are offset from the first link ends (35) such that adjacently positioned belt modules (13, 16) are capable of intercalating so that the first link ends (41) of one belt module (16) fit into spaces defined between the second plurality of link ends (38) of an adjacent belt module (13). See id. at page 6, lines 5-7 and Fig. 1. The second link ends (38) have second pivot rod openings (47) disposed transverse to the direction of belt travel (20). See specification at page 6, lines 15-18. The second link ends (38) also have an edge portion with an edge portion pivot rod opening (51) disposed transverse to the direction of belt travel (20), the edge portion pivot rod opening (51) having a diameter larger than a diameter of the first and second pivot rod openings (48, 47) of the first and second link ends (35, 38). The edge portion pivot rod opening (51) is in registry with the second pivot rod openings (47), and the edge portion has a slot (73) defined therein. See id. at page 7, line 17. The slot (73) intersects the edge portion pivot rod opening (51), and a blocking member (70) is disposed in the slot (73). See id. at page 7, lines 16-18. The blocking member (70) is capable of moving between a first (open) position and a second (closed) position. See specification at page 7, lines

18-20. The blocking member (70) extends into the pivot rod opening (51) in the second (closed) position. See id. at page 8, lines 13-15. The method additionally comprises placing pivot rods (103) through the pivot rod openings (51) and the first and second pivot rod openings (47, 48) in adjacent belt modules (13, 16) such that the first and second link ends (38, 41) of the adjacent belt modules (13, 16) are intercalated and the adjacent belt modules (13, 16) are interlinked into adjacent hinged rows to form an endless belt (10) capable of articulating about a drive sprocket. See id. at page 6, lines 17-25. In this manner, the pivot rods (103) can only be removed from the intercalated modules (13, 16) in one direction. See id. at page 7, lines 14-16.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

There is one ground of rejection to be reviewed on appeal:

- 1) Claims 1-17 are rejected under 35 USC 103(a) as being unpatentable over U.S. Pat. Application Pub. No. 2002/0195321 (“Guldenfels”) or U.S. Pat. Application Pub. No. 2001/0045346 (“Costanzo”) in view of U.S. Pat. No. 6,308,825 (“Nakamura”).
- 2) Claims 1-6, 8-14, and 16-17 are rejected under 35 USC 103(a) as being unpatentable over Guldenfels or Costanzo in view of the U.S. Pat. No. 5,904,241 (“Verdigets” et al.).

VII. ARGUMENT

1. *Rejection of claims 1-17 under 35 U.S.C. § 103(a) as being unpatentable over Guldenfels or Costanzo in view of Nakamura*

A. Claims 1-17

With respect to the stated rejection, claims 1-17 stand or fall together.

Applicants respectfully submit that the prior art is directed to locks used to retain headless pivot rods. The problem with using locks to retain headless pivot rods is that they are difficult to extract.

If a headless pivot rod is closed off on one side, it is very difficult to extract the

rod. Typically, a special tool is required to extract the headless pivot rod. If there are two locks on either side of the headless pivot rod, then a separate rod or steel pin is needed to push the rod out.

Despite all of these problems, the prior art has not proposed an adequate solution. But, the present invention provides a solution by using a headed pivot rod, which can be extracted with a simple screwdriver. One advantage of the present invention is that this same screwdriver can also be used to open the lock from the same side as the headed pivot rod.

Because the headed pivot rod has its own retaining function in addition to the lock, a lock is not needed on the opposite belt edge. Thus, only one belt edge is required for belt extraction. In addition since there is no lock on the second belt edge and because there is no need for a different edge module on the lockless side, costs can be reduced.

Applicants respectfully submit that Nakamura is directed to headless pivot rods. Nakamura requires either a closed second end or a second plug positioned at the end to retain the pin. As noted above, there are several problems with using locks on headless pivot rods. The present invention solves many of these problems. Because the prior art does not even identify the problems associated with using locks on headless pivot rods, it does not suggest a solution for solving the problem. At the time of the present invention, the state of the art did not contemplate using locks to retain headed pivot rods.

In particular, nothing in Nakamura teaches that there are problems and difficulties with using lock and headless pivot rod combinations. Because there is no such disclosure in Nakamura, nothing in this reference suggests solving the problem by adapting the lock combination for a headed pivot rod.

The Costanzo reference is not directed to solving the problem of holding the pivot rods in place, nor it is directed to solving the problem of easily removing the pivot rod. Rather, Costanzo is directed to cleanability of conveyor belts (See paragraph [006], conveyor belts having low backline pressure or low-friction side transfer (See paragraph [007]), and conveyor belts with the capability of justifying the conveyed articles on one side (See paragraph [0008]). Costanzo merely mentions that its conveyor belt modules use hinge pins or headed pivot rods. One of ordinary skill in the art would not combine the Nakamura reference with the Costanzo

reference because nothing in Costanzo teaches that there is a problem associated with using headed pivot rods.

The Guldenfels reference is likewise not directed to solving the problem of holding the pivot rods in place, nor is it directed to solving the problem of easily removing the pivot rod. Rather, Guldenfels is directed to the design of the modules such that the pivot rods and the link end apertures or slots can be cleaned better without dismantling the belt (See paragraph [004]). Guldenfels merely mentions that its conveyor belt uses pivot rods that pass through the link ends.

Applicants respectfully request the reversal of the rejection of claims 1-17 17 under 35 U.S.C. § 103(a) as being unpatentable over Guldenfels or Costanzo in view of Nakamura.

2. *Rejection of claims 1-6, 8-14, and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over Guldenfels or Costanzo in view of Verdigets*

With respect to the stated rejection, claims 1-6, 8-14, and 16-17 stand or fall together.

Applicants respectfully submit that the entire disclosure of Verdigets is directed to headless pivot rods. The Verdigets reference also requires a closed second end or a second shuttle plug positioned at the second end to retain the pivot rod. The Examiner contends that one of ordinary skill could obtain the present invention without undue experimentation. But the Applicants respectfully submit that the Examiner has not provided an articulated reason for adapting the Verdigets invention to headed pivot rods. Just because something is simple does not mean that it would have been obvious to one of ordinary skill in the art.

Additionally, for all of the reasons above with respect to Nakamura, the Applicants respectfully argue that one of ordinary skill in the art would not have been motivated to adapt the invention of Verdigets to headed pivot rods.

Applicants respectfully request the reversal of the rejection of claims 1-6, 8-14, and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over Guldenfels or Costanzo in view of Verdigets.

VIII. CLAIMS APPENDIX

1. A belt module for use with a headed pivot rod, the belt module, comprising: a first plurality of link ends disposed in a direction of belt travel, the first link ends having first pivot rod openings disposed transverse to the direction of belt travel; a second plurality of link ends extending in a direction opposite to the first plurality of link ends, the second link ends being offset from the first link ends such that adjacently positioned belt modules are capable of intercalating so that the first link ends of one belt module fit into spaces defined between the second plurality of link ends of an adjacent belt module, the second link ends having second pivot rod openings disposed transverse to the direction of belt travel; an edge portion having an edge portion pivot rod opening disposed transverse to the direction of belt travel, the edge portion pivot rod opening having a diameter larger than a diameter of the first and second pivot rod openings such that the pivot rod can only be removed in one direction, the edge portion pivot rod opening being in registry with the second pivot rod openings, the edge portion having a slot defined therein, the slot intersecting with the pivot rod opening ; and, a blocking member disposed in the slot and capable of moving between a first position and a second position, the blocking member extending into the edge portion pivot rod opening and obstructing the head of the pivot rod in the second position such that the pivot rod is prevented from exiting the edge portion pivot rod opening.
2. The belt module of Claim 1, wherein the slot in the edge portion is disposed substantially parallel to the direction of belt travel.
3. The belt module of Claim 1, wherein the blocking member has a detent member.
4. The belt module of Claim 3, further comprising a detent opening extending to the slot.
5. The belt module of Claim 4, wherein the detent member is disposed in the detent opening when the blocking member is in the first position.

6. The belt module of Claim 1, wherein the blocking member has a first portion and a second portion, the second portion being wider than the first portion such that the blocking member has an L-shape.
7. The belt module of Claim 1, wherein the blocking member has a slot defined therein.
8. The belt module of Claim 3, wherein the detent member engages with a wall adjacent to the pivot rod opening when the blocking member is in the second position.
9. A modular belt, comprising: a first belt module comprising a first plurality of link ends disposed in a direction of belt travel, the first link ends having first pivot rod openings disposed transverse to the direction of belt travel, a second plurality of link ends extending in a direction opposite to the first plurality of link ends, the second link ends being offset from the first link ends such that adjacently positioned belt modules are capable of intercalating so that the first link ends of one belt module fit into spaces defined between the second plurality of link ends of an adjacent belt module, the second link ends having second pivot rod openings disposed transverse to the direction of belt travel, an edge portion having an edge portion pivot rod opening disposed transverse to the direction of belt travel, the edge portion pivot rod opening having a diameter larger than a diameter of the first and second pivot rod openings of the first and second link ends, the edge portion pivot rod opening being in registry with the second pivot rod openings, the edge portion having a slot defined therein, the slot intersecting with the edge portion pivot rod opening, and a blocking member disposed in the slot and capable of moving between a first position and a second position, the blocking member extending into the edge portion pivot rod opening in the second position; a second belt module disposed adjacent to the first belt module, the second belt module comprising a first plurality of link ends disposed in a direction of belt travel, the first link ends having first pivot rod openings disposed transverse to the direction of belt travel, a second plurality of link ends extending in a direction opposite to the first plurality of link ends, the second link ends being offset from the first link ends such that adjacently positioned belt modules are capable of intercalating

so that the first link ends of one belt module fit into spaces defined between the second plurality of link ends of an adjacent belt module, the second link ends having second pivot rod openings disposed transverse to the direction of belt travel, an edge portion having an edge portion pivot rod opening disposed transverse to the direction of belt travel, the edge portion pivot rod opening having a diameter larger than a diameter of the first pivot rod openings of the first and second link ends, the edge portion pivot rod opening being in registry with the second pivot rod openings, the edge portion having a slot defined therein, the slot intersecting with the edge portion pivot rod opening, and a blocking member disposed in the slot and capable of moving between a first position and a second position, the blocking member extending into the edge portion pivot rod opening in the second position; at least one pivot rod having an enlarged head at a first end, the at least one pivot rod disposed through the edge portion pivot rod opening in the first belt module and disposed through the intercalated first and second pivot rod openings of the first belt module and the second belt module, the enlarged head of the pivot rod being obstructed by the blocking member in its second position such that the pivot rod is prevented from exiting the edge portion pivot rod opening; and, wherein the pivot rod can only be removed in one direction.

10. The belt module of Claim 9, wherein the slot in the edge portion is disposed substantially parallel to the direction of belt travel.
11. The belt module of Claim 9, wherein the blocking member has a detent member.
12. The belt module of Claim 11, further comprising a detent opening extending to the slot.
13. The belt module of Claim 12, wherein the detent member is disposed in the detent opening when the blocking member is in the first position.

14. The belt module of Claim 9, wherein the blocking member has a first portion and a second portion, the second portion being wider than the first portion such that the blocking member has an L-shape.
15. The belt module of Claim 9, wherein the blocking member has a slot defined therein.
16. The belt module of Claim 11, wherein the detent member engages with a wall adjacent to the pivot rod opening when the blocking member is in the second position.
17. A method of configuring a modular belt, comprising: providing a plurality of belt modules having a first plurality of link ends disposed in a direction of belt travel, the first link ends having first pivot rod openings disposed transverse to the direction of belt travel, a second plurality of link ends extending in a direction opposite to the first plurality of link ends, the second link ends being offset from the first link ends such that adjacently positioned belt modules are capable of intercalating so that the first link ends of one belt module fit into spaces defined between the second plurality of link ends of an adjacent belt module, the second link ends having second pivot rod openings disposed transverse to the direction of belt travel, an edge portion having an edge portion pivot rod opening disposed transverse to the direction of belt travel, the edge portion pivot rod opening having a diameter larger than a diameter of the first and second pivot rod openings of the first and second link ends, the edge portion pivot rod opening being in registry with the second pivot rod openings, the edge portion having a slot defined therein, the slot intersecting with the edge portion pivot rod opening, a blocking member disposed in the slot and capable of moving between a first position and a second position, the blocking member extending into the pivot rod opening in the second position ; placing pivot rods through the pivot rod openings and the first and second pivot rod openings in adjacent belt modules such that the first and second link ends of the adjacent belt modules are intercalated and the adjacent belt modules are interlinked into adjacent hinged rows to form an endless belt capable of articulating about a drive sprocket; and, wherein the pivot rods can only be removed from the intercalated modules in one direction.

IX. EVIDENCE APPENDIX

There is no appended evidence.

X. RELATED PROCEEDINGS APPENDIX

There are no other related proceedings.

Respectfully submitted,

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